I CLAIM

1. Plant for the hot treatment of waste gases from municipal waste incinerators, comprising a first line of taking up hot waste gases to be treated by an exit section of a municipal waste incinerator, at least a one stage fluid bed contained within at least one reactor and invested by the waste gases to be treated, at least one hopper for charging the solid granular material inside said at least one reactor, a cyclone separator at the outlet of the said reactor; the treated waste gases exiting from the said at least one reactor being first introduced into said separator and subsequently conveyed, by said first uptake line, toward a final discharge chimney; wherein in said first uptake line, downstream of said cyclone separator, provision is made for a second recirculating line that moves the waste gases treated by the said reactor, upstream of the said reactor, so that by this second line said treated waste gases mix with the waste gases to be treated originating from the uptake section of the incinerator.

2. Plant according to claim 1, wherein at least one super-heater is placed inside the waste gas treating reactor, to be passed by steam to be superheated and sent into an electrical energy producing steam cycle.

3. Plant according to claim 1, wherein said fluid bed comprises a first fixed bed stage, a second boiling bed stage and a third circulating bed stage.

4. Plant according to claim 1, wherein it comprises, downstream of the waste gas uptake section from the incinerator, a first reactor containing said fixed bed first stage.

5. Plant according to claim 4, wherein it comprises, downstream of said first reactor, a second reactor, which contains, from the bottom toward the top, said boiling bed second stage and said circulating bed third stage.

6. Plant according to claim 4, wherein the inside of said first reactor houses a first super-heater passed by steam and embedded in said fixed bed first stage.

7. Plant according to claim 5, wherein the inside of said second reactor houses a second and a third super-heater which are embedded in said second boiling bed second stage and in said circulating bed third stage, respectively.

8. Plant according to claim 4, wherein the inside of said first reactor houses at least one pair of containment grids of said first stage, said grids being essentially vertical and passed by steam.

9. Plant according to claim 1, wherein it comprises an uptake connection of the waste gases to be treated, placed downstream of the uptake section of said waste gases from the incinerator.

10. Plant according to claim 1, wherein said uptake section is the afterburner of the incinerator, or a section wherein the waste gases attain the highest temperature.

11. Plant according to claim 9, wherein it comprises a temperature sensor housed in said first uptake line of the waste gases to be treated, and situated downstream of said connection and upstream of said first reactor.

12. Plant according to claim 11, wherein said temperature sensor cooperates with a regulating valve provided for the treated waste gas recirculating line, said valve and said sensor being capable of determining the flow rate of the treated waste gases to be mixed with the waste gases to be treated, coming from said first uptake line.

13. Plant according to claim 1, wherein said solid granular material comprises calcium carbonate and/or calcium bicarbonate.

14. Plant according to claim 13, in which to the said calcium carbonate and/or calcium bicarbonate also sodium carbonate and/or sodium bicarbonate are added.

15. Plant according to claim 4, wherein solid granular material is introduced into said first reactor from the top, by a charging hopper provided below at least one shut-off valve.

16. Plant according to claim 5, wherein said solid granular material is introduced into said second reactor at a point corresponding to the boiling bed second stage through a lateral external duct communicating with an upper charging hopper.

17. Plant according to the claim 5, wherein said first and second reactors comprise in a lower and/or lateral position at least one valve for discharging the exhausted material.

18. Plant according claim 1, wherein in said plant, depending on the type of solid granular reagent, its particle size and morphology and the crossing velocity of the waste gases relative to the fluid bed, a mechanical shielding of the coil is achieved by the ability to vary the ratio between the surface directly facing the waste gas and the surface facing the reagent, in accordance with the operating requirements.